

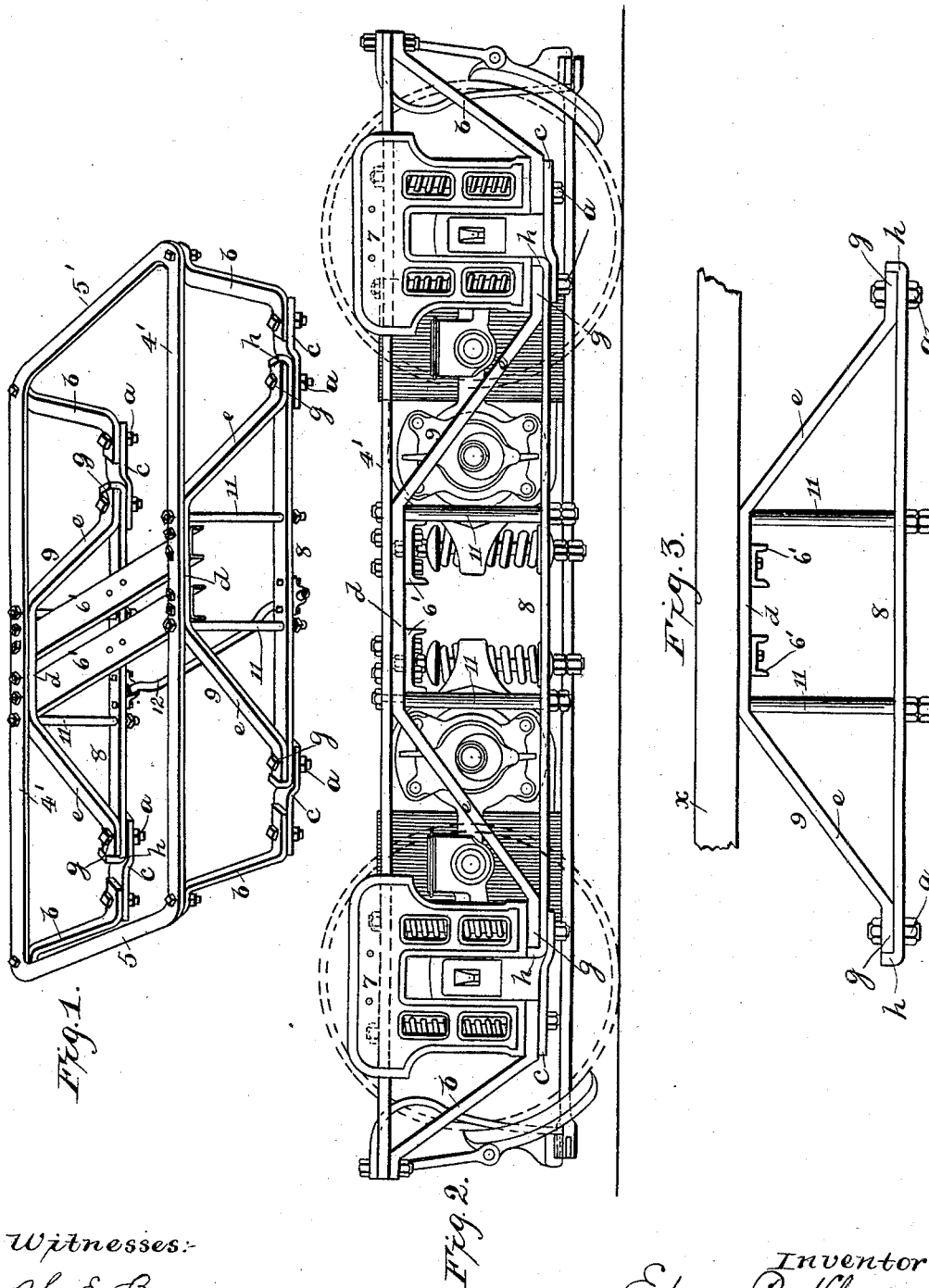
(No Model.)

2 Sheets—Sheet 1.

E. PECKHAM.  
MOTOR TRUCK.

No. 417,937.

Patented Dec. 24, 1889.



Witnesses:-  
 W. E. Bowen  
 W. L. Murray.

Inventor:-  
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(No Model.)

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Fig. 4.

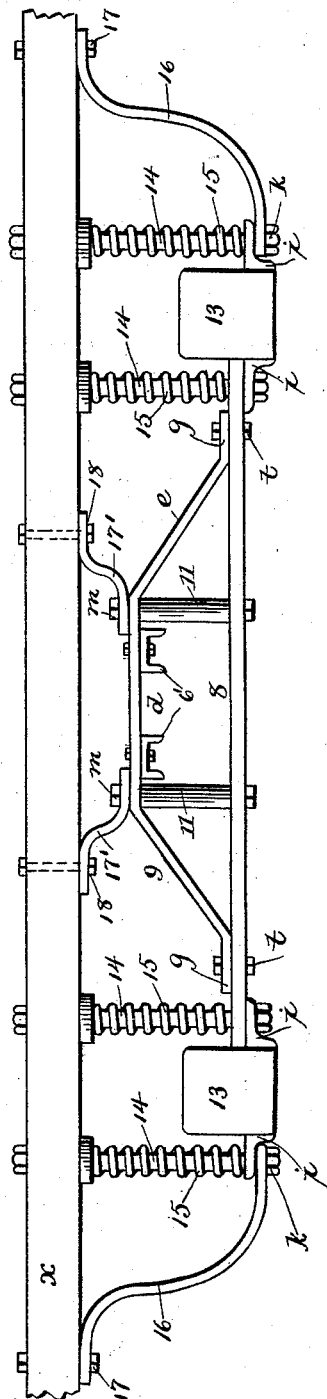


Fig. 6.

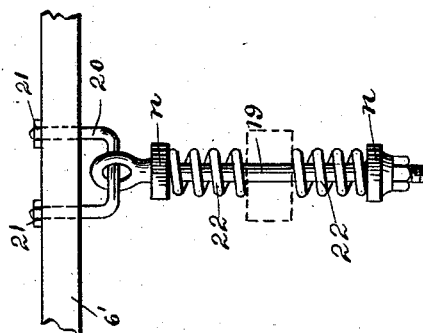
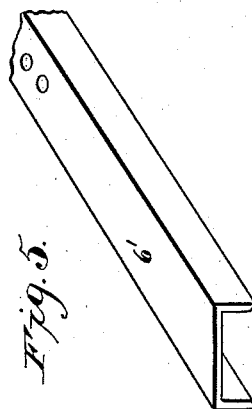


Fig. 5.



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# UNITED STATES PATENT OFFICE.

EDGAR PECKHAM, OF NEW YORK, N. Y.

## MOTOR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 417,937, dated December 24, 1889.

Application filed August 21, 1889. Serial No. 321,454. (No model.)

### *To all whom it may concern:*

Be it known that I, EDGAR PECKHAM, a citizen of the United States; and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Motor-Trucks, of which the following is a specification.

My invention relates to motor-trucks intended particularly for supporting electric motors which, by means of suitable gearing between them and the axles of the drive-wheels, are adapted to impart motion to the said wheels to propel the truck.

My invention is described hereinafter, and its novel features are set forth in the claims at the end of the description.

To enable those interested in the subject to which the invention relates to construct and make use of my improvements, I will now describe the same in connection with the accompanying drawings, which form part of this specification, and in which like features are indicated by like figures and letters of reference in the several views, and wherein—

Figure 1 is a view in perspective of a truck-frame embodying my invention; Fig. 2, a side elevation of a motor-truck including the frame shown in Fig. 1; Fig. 3, a detail of a part of said truck-frame; Fig. 4, a side elevation of a motor-truck, showing my construction of truss (hereinafter referred to) embodied in an organization of truck including posts, instead of pedestals, co-operating with the journal-boxes; Fig. 5, a perspective view of the cross-bar for supporting the motor at the top of the truck-frame; and Fig. 6, a side view of said cross-bar, showing the flexible joint for suspending the motor connected thereto.

Referring to the drawings, the truck-frame in Figs. 1 and 2 is illustrated as embodying the longitudinal sills 4', united by the transverse end pieces 5'. The parts 4' and 5' may be, and generally are, made integral. The sills 4' are intended in this construction to sustain the weight of the motors in proper relation to the axles and drive-wheels, instead of having the same supported, as is usual, from the frame-work suspended from the sills 4'. The transverse bars 6', which are bolted to the sills 4', as shown, serve primarily as such supporting means for the motors, and also serve as braces to assist the

sills 4', or the trusses, presently described, to resist lateral thrust. In case it may be desirable to omit the sills 4' and end pieces 5' and bolt the trusses directly to the car-body  $\alpha$ , as shown in Fig. 3, the transverse bars 6' will be bolted to the upper longitudinal member of the truss-brace simply. The pedestals 7, Fig. 2, may be of the usual form, and they co-operate with the journal-boxes in the customary manner.

To give the required strength and rigidity to the structure without employing an undue amount of metal is an important object of my present invention, and to accomplish this object I make use of the metal truss hereinbefore mentioned. This truss, which is marked 9—one being employed at each side of the truck-frame—is of the form indicated in the drawings, and comprises an upper longitudinal section  $d$ , which rests against the under surface of the sill 4', as in Figs. 1 and 2, or against the body of the car, as shown in Figs. 3 and 4, and two legs or branches  $e$ , which incline downwardly from member  $d$  and terminate in angular ends  $g$ , furnishing feet for the truss. The angular ends  $g$  rest on the lower longitudinal beam 8, which extends from the front to the rear journal-box or pedestal and constitutes the lowermost element of said truss. The extremities of beam 8 may be turned up, if preferred, as shown at  $h$  in Figs. 1 to 3, in which case the angular ends  $g$  of lateral members  $e$  of the truss will abut against said vertical extremities  $h$ , as seen in the drawings. The ends  $g$ , as well as the ends of beam 8, are provided with holes to receive the short bolts by which the said parts are held together, as shown. Bolted to each corner of the frame, as seen in Figs. 1 and 2, is a depending iron  $b$ , whose lower end is bent at an angle to the body of said iron and is provided with a bolt-hole. The short iron  $c$  is secured at one end to the under surface of beam 8 by the same bolt which holds the extremity of said beam and the end  $g$  of branch  $e$  together, while the opposite end of iron  $c$  is bolted to iron  $b$ , as seen in the drawings. By this construction the axle and wheels of the truck, Figs. 1 and 2, are quickly removed through the bottom by unscrewing the nuts  $a$ , so as to take away the iron  $c$ , or it may be swung around on one of said nuts as a pivot.

The truss 9, comprising, as aforesaid, the members *d e* 8, is supported in operative relation to the sills 4' or the car-body *x* by means of bolts 11, which pass through sleeves abutting against *d* and 8 in the usual manner, the said bolts being held in place by nuts at top and bottom, as shown. Obviously the bolts 11 also give strength to the structure and enable it to resist vertical pressure, as well as prevent lateral displacement of the trusses 9 at the tops. The transverse connecting-bar 12, bolted, as shown, to the respective longitudinal beams 8, serves to prevent the lateral spreading of the beams 8.

In Fig. 4, which shows another organization of truck-frame embodying my truss 9, the car-body is indicated by *x*, and 13 designates the axle-boxes. These boxes are provided with brackets *i*, and the lowermost member of the truss 8 is supported on said brackets and secured thereto by the bolts 14, encircled by the coiled spring 15, as shown. The bolts 14 pass loosely through holes in the beam 8 and base of the car-body, so that the vertical motion of the car may compress the springs 15 with the usual elastic effect. The brackets *i* on the outside of the boxes 13 are provided with similar bolts and springs operating in a like manner. The nuts *k* at the bottom of the last-mentioned bolts, in addition to keeping the bolts in place, serve to secure one end of the curved spring 16 to the lower surface of bracket *i*, while the opposite end of said curved spring 16 is bolted to the car-body, as at 17. That part of the truss marked *d e* is secured to the lower longitudinal beam 8 of said truss by bolts *l*, passing through the ends *g* of the legs *e*, as indicated, and bolts 11 connect the beam 8 with the upper longitudinal member *d* of the truss, as in the organization shown in Figs. 1 to 3, and operate in like manner. The nuts *m* at the top of the last-mentioned bolts 11 secure one end of the bent spring-bars 17' to the top of member *d*, while the opposite ends of said spring-bars are bolted, as shown at 18, to the car-body. By this construction not only is the requisite elastic motion of the car-body provided for, but a substantial connection between truck-frame and car-body is secured at that point. The running-gear of the truck, as will be seen, is supported wholly by the described truss arrangement. Comparatively little metal is used in this organization, and yet its strength is very great.

In Fig. 4 the transverse braces 6' are bolted to member *d* of the truss, as indicated.

The motor is supported from brace 6' at the top of the frame by the arrangement shown in Fig. 6, which consists of a metal bar 19, having an eye at the top, by which it is suspended from the staple 20, the latter being secured centrally to the brace 6' by nuts 21 or equivalent means. The bar 19 has shoulders *n* at the top and bottom, against which shoulders the encircling spiral springs 22 abut. The forward end of the motor is hung

to this spring-equipped bar 19 in such manner as to secure the required flexible connection between the motor and its support, so that the motor readily adjusts itself to different positions when the car is in motion.

The form of truss herein shown and described enables me to furnish a truck-frame embodying maximum strength with the employment of a minimum weight of metal, since I do not rely in any marked degree upon the rigidity of the material employed to resist the compressive forces. By supporting the motor from the top of the frame I obtain an unobstructed bottom, which enables me to place all of the apparatus, including the wheels and axles, in position from the bottom, which is a great advantage when removing the apparatus for repairs, &c.; and the supporting of the motor from the top instead of at the bottom of the motor-truck adapts the truck to some desirable types of motors, which to obtain the best results should be thus supported, besides rendering it possible to obtain that degree of flexibility between the motor and its support that is necessary to permit the apparatus to readily adapt itself to the varied motions of the moving truck.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A motor-truck provided with side supporting frames or trusses comprising upper and lower longitudinal members and laterally-inclined members bolted to the lower longitudinal members, in combination with transverse motor-supporting bars bolted to the upper longitudinal members and bolts, as 11, connecting the upper and lower longitudinal members together between the laterally-inclined members, substantially as set forth.

2. The combination, with the car-body, of side supporting frames or trusses comprising upper and lower longitudinal members, laterally-inclined members, and bolts connecting the upper and lower longitudinal members together, the lower longitudinal members supported on the journal-boxes of the truck and the upper longitudinal members connected with the car-body, substantially as set forth.

3. In a motor-truck, a truss consisting of upper and lower longitudinal members, laterally-inclined members bolted to the lower longitudinal member, and upright bolts connecting the said two longitudinal members, in combination with the depending irons *b* and horizontal connecting-irons *c*, bolted to *b* and also to the ends of said lower longitudinal member, substantially as set forth.

4. In a motor-truck, a pair of trusses each consisting of upper and lower longitudinal members and laterally-inclined members bolted to the lower longitudinal members, in combination with upright bolts connecting the said upper and lower longitudinal members and a transverse rod or beam connect-

ing the two lower longitudinal members, substantially as set forth.

5. In a motor-truck, a truss consisting of upper and lower longitudinal members and laterally-inclined members, the latter bolted to said lower longitudinal member, in combination with journal-boxes provided with brackets supporting the said lower longitudinal member, upright bolts connecting the upper and lower longitudinal members, and curved springs secured at one end to the upper longitudinal member of the truss, while their other ends are bolted to the car-body, substantially as set forth.

6. A motor-truck provided with side supporting frames or trusses comprising upper and lower longitudinal members and laterally-inclined members bolted to the lower longitudinal members, in combination with journal-boxes provided with brackets upon which said truss-frames are supported, substantially as set forth.

7. In a motor-truck, journal-boxes provided with brackets and trusses supported on said brackets and bolted to the base of the car, as described, in combination with the curved springs, as 16, secured at one end to

the brackets of the journal-boxes and having their opposite ends bolted to the base of the car, substantially as set forth.

8. The combination, with the frame of a motor-truck provided with a fixed transverse bar, of a metal rod suspended from said transverse bar and provided with a pair of coiled springs co-operating with the top and bottom surfaces of the forward end of the motor, through which said metal bar passes, substantially as set forth.

9. The combination, with the frame of a motor-truck provided with a fixed transverse bar having a suspending-staple bolted through it, of a metal rod having shoulders, as n, and also having an eye by which it is suspended from said staple, and coiled springs, as 22, encircling said rod and adapted to co-operate with the forward end of the motor, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 17th day of August, A. D. 1889.

EDGAR PECKHAM.

Witnesses:

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W. E. BOWEN.